

## **Chapter 4 Citations**

### **1. A Bovine Albumin Peptide as a Possible Trigger of Insulin-dependent Diabetes Mellitus**

#### **Abstract**

#### **“BACKGROUND:**

Cow's milk has been implicated as a possible trigger of the autoimmune response that destroys pancreatic beta cells in genetically susceptible hosts, thus causing diabetes mellitus. Studies in animals have suggested that bovine serum albumin (BSA) is the milk protein responsible, and an albumin peptide containing 17 amino acids (ABBOS) may be the reactive epitope. Antibodies to this peptide react with p69, a beta-cell surface protein that may represent the target antigen for milk-induced beta-cell--specific immunity.

#### **METHODS:**

We used immunoassays and Western blot analysis to analyze anti-BSA antibodies in the serum of 142 children with insulin-dependent diabetes mellitus, 79 healthy children, and 300 adult blood donors. Anti-ABBOS antibodies were measured in 44 diabetic patients at the time of diagnosis, three to four months later, and one to two years later.

#### **RESULTS:**

All the diabetic patients had elevated serum concentrations of IgG anti-BSA antibodies (but not of antibodies to other milk proteins), the bulk of which were specific for ABBOS: The mean (+/- SE) concentration was 8.5 +/- 0.2 kilofluorescence units (kFU) per microliter, as compared with 1.3 +/- 0.1 kFU per microliter in the healthy children. IgA antibodies were elevated as well, but not IgM antibodies. The antibody concentrations declined after diagnosis, reaching normal levels in most patients within one to two years. The initial decline involved anti-ABBOS--specific antibodies almost exclusively. Much lower serum concentrations of anti-BSA antibodies were found in all 379 control subjects, but only 2.5 percent of them had small amounts of ABBOS-specific IgG.

#### **CONCLUSIONS:**

Patients with insulin-dependent diabetes mellitus have immunity to cow's-milk albumin, with antibodies to an albumin peptide that are capable of reacting with a beta-cell--specific surface protein. Such antibodies could participate in the development of islet dysfunction.”

### **Link**

<http://www.ncbi.nlm.nih.gov/pubmed/1377788>

### **Reference**

Karjalainen, J., J. M. Martin, M. Knip, J. Ilonen, B. H. Robinson, E. Savilahti, H. K. Åkerblom, H. M. Dosch, Jill Norris, and Massimo Pietropaolo. "A Bovine Albumin Peptide as a Possible Trigger of Insulin-dependent Diabetes Mellitus." *Journal of Endocrinological Investigation J Endocrinol Invest* 17.7 (1994): 565-72.

## **2. Increased Levels of Bovine Serum Albumin Antibodies in Patients With Type 1 Diabetes and Celiac Disease-Related Antibodies**

### **Abstract**

#### **“OBJECTIVES:**

To detect the presence of antibodies against bovine serum albumin in a cohort of Spanish patients with type 1 insulin-dependent diabetes.

#### **METHODS:**

Antibodies were measured using an in-house enzyme-linked immunosorbent assay test in 80 patients with type 1 diabetes, subdivided according to the presence or absence in their serum of celiac disease-related antibodies. For comparison, 30 patients with celiac disease (nondiabetic), 13 patients with autoimmune thyroiditis, and 45 healthy volunteers were used.

#### **RESULTS:**

Thirty-one percent of patients with diabetes yielded a positive result, with a mean value of 26.1 +/- 21.8 arbitrary units (AU). If the group was split into those with celiac disease-related antibodies and those lacking them, the percentages were 53% and 25%, respectively, with a mean value of 39.6 +/- 28.4 AU and 22.4 +/- 18.3 AU (P = 0.003), respectively. Seventy-three

percent of celiac patients showed bovine serum albumin antibodies with a mean level of 38.8 +/- 27.7 AU, comparable to that of patients with diabetes with celiac antibodies, but higher than the group lacking them (P = 0.001). Although 46% of patients with autoimmune thyroiditis had positive results, the level detected (22.1 +/- 8.7 AU) was significantly lower than that recorded in patients with type 1 diabetes who had celiac disease antibodies (P = 0.04) and celiac patients (P = 0.04). Healthy volunteers showed no antibodies against bovine serum albumin.

## **CONCLUSIONS:**

These data suggest that bovine serum albumin antibodies appears in patients with a compromised epithelial permeability, and they reflect a general defect in the process of immunologic tolerance associated with a predisposition to autoimmunity, rather than immunity specific to beta cells.”

### **Link**

<http://www.ncbi.nlm.nih.gov/pubmed/12883297>

### **Reference**

Rodríguez-Juan, Cristina, Lucía Sala-Silveira, Mercedes Pérez-Blas, Anna P. Valeri, Noemí Aguilera, Mercedes López-Santalla, Ana Fuertes, and José M. Martín-Villa. "Increased Levels of Bovine Serum Albumin Antibodies in Patients With Type 1 Diabetes and Celiac Disease-Related Antibodies." *Journal of Pediatric Gastroenterology and Nutrition* 37.2 (2003): 132-35.

## **3. Parental Well-being Surrounding First Birth as a Determinant of Further Parity Progression**

### **Abstract**

“A major component driving cross-country fertility differences in the developed world is differences in the probability of having additional children among those who have one. Why do people stop at having only one child? We hypothesize that the experience of the transition to parenthood is an important determinant of further fertility. Analyzing longitudinal data from Germany, we find that the experience during the transition to parenthood, as measured by changes in subjective well-being, predicts further parity progression. A drop in well-being surrounding first birth predicts a decreased likelihood of having another child. The association is particularly strong for older parents and those with higher education: these characteristics may be related to the ability or willingness to revise fertility plans based on prior experiences. Parents’ experience with the first birth is an important and understudied factor in determining completed family size, and policy-makers concerned about low fertility should pay attention to factors that influence the well-being of new parents.”

## **Link**

<http://link.springer.com/article/10.1007/s13524-015-0413-2>

## **Reference**

Margolis, Rachel, and Mikko Myrskylä. "Parental Well-being Surrounding First Birth as a Determinant of Further Parity Progression." *Demography* 52.4 (2015): 1147-166.

## **4. Randomized, controlled trial of division of tongue-tie in infants with feeding problems.**

### **Abstract**

#### **“OBJECTIVE:**

To determine whether, in infants with a tongue-tie and a feeding problem, the current medical treatment (referral to a lactation consultant) or immediate division works best and enables the infants to feed normally.

#### **METHODS:**

Between March and July 2002, all the babies in the district of Southampton with tongue-ties were followed in order to see if they had any feeding problems. If they developed problems, the mothers gave written consent and were enrolled in an ethics committee approved, randomized, controlled trial, comparing 48 h of intensive lactation consultant support (control) with immediate division.

#### **RESULTS:**

A total of 201 babies had tongue-tie, of whom 88 had breast-feeding or bottle-feeding problems. Thirty-one were not enrolled, so 57 were randomized. Of the 29 controls, one improved (3%) and breast-fed for 8 months, but 28 did not. At 48 h, these 28 were offered division, which all accepted, and 27 improved (96%) and fed normally. Of the 28 babies who had immediate division, 27 improved and fed normally but one remained on a nipple shield ( $P < 0.001$ ). Twenty-four mothers breast-fed for 4 months (24/40, 60%). Overall, division of the tongue-tie babies resulted in improved feeding in 54/57 (95%) babies.

#### **CONCLUSIONS:**

This randomized, controlled trial has clearly shown that tongue-ties can affect feeding and that division is safe, successful and improved feeding for mother and baby significantly better than the intensive skilled support of a lactation consultant.”

### **Link**

<http://www.ncbi.nlm.nih.gov/pubmed/15953322>

### **Reference**

Hogan, Monica, Carolyn Westcott, and Mervyn Griffiths. "Randomized, Controlled Trial of Division of Tongue-tie in Infants with Feeding Problems." *Journal of Paediatrics and Child Health J Paediatr Child Health* 41.5-6 (2005): 246-50.

## **5. Treatment of Ankyloglossia and Breastfeeding Outcomes: A Systematic Review**

### **Abstract**

#### **“OBJECTIVE:**

Ankyloglossia is a congenital condition characterized by an abnormally short, thickened, or tight lingual frenulum that restricts tongue mobility. The objective of this study was to systematically review literature on surgical and nonsurgical treatments for infants with ankyloglossia.

#### **METHODS:**

Medline, PsycINFO, Cumulative Index of Nursing and Allied Health Literature, and Embase were searched up to August 2014. Two reviewers independently assessed studies against predetermined inclusion/exclusion criteria. Two reviewers independently extracted data regarding participant and intervention characteristics and outcomes and assigned quality and strength-of-evidence ratings.

#### **RESULTS:**

Twenty-nine studies reported breastfeeding effectiveness outcomes (5 randomized controlled trials [RCTs], 1 retrospective cohort, and 23 case series). Four RCTs reported improvements in breastfeeding efficacy by using either maternally reported or observer ratings, whereas 2 RCTs found no improvement with observer ratings. Although mothers consistently reported improved

effectiveness after frenotomy, outcome measures were heterogeneous and short-term. Based on current literature, the strength of the evidence (confidence in the estimate of effect) for this issue is low. We included comparative studies published in English. The evidence base is limited, consisting of small studies, short-term outcomes, and little information to characterize participants adequately. No studies addressed nonsurgical interventions, longer-term breastfeeding or growth outcomes, or surgical intervention compared with other approaches to improve breastfeeding, such as lactation consultation

## **CONCLUSIONS:**

A small body of evidence suggests that frenotomy may be associated with mother-reported improvements in breastfeeding, and potentially in nipple pain, but with small, short-term studies with inconsistent methodology, strength of the evidence is low to insufficient.

### **Link**

<http://pediatrics.aappublications.org/content/early/2015/04/28/peds.2015-0658>

### **Reference**

Francis, D. O., S. Krishnaswami, and M. Mcpheeters. "Treatment of Ankyloglossia and Breastfeeding Outcomes: A Systematic Review." *Pediatrics* 135.6 (2015)